

**TRIP REPORT FOR THE  
ATLANTIC METALS CORPORATION  
SOIL SAMPLING EVENT  
PHILADELPHIA, PENNSYLVANIA**

*Prepared for*

**U.S. Environmental Protection Agency**  
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EPA Contract No. 68-S3-00-02

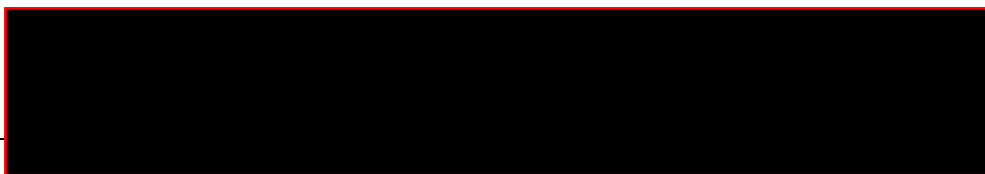
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Prepared by

Approved by



Project Manager

START Site Assessment Manager

## CONTENTS

<b><u>Section</u></b>	<b><u>Page</u></b>
1.0 INTRODUCTION .....	1
2.0 SITE BACKGROUND.....	1
3.0 INVESTIGATION ACTIVITIES.....	2
4.0 ANALYTICAL RESULTS SUMMARY AND CONCLUSIONS .....	3
5.0 REFERENCES .....	5

### **Appendices**

A	FIGURES
B	LOGBOOK DOCUMENTATION

## **1.0 INTRODUCTION**

Under Eastern Area Superfund Technical Assessment and Response Team (START) Contract No. EP-S3-05-02, Technical Direction Document (TDD) No. E33-024-08-12-001, U.S. Environmental Protection Agency (EPA) Region 3 tasked Tetra Tech EM Inc. (Tetra Tech), to conduct a site inspection (SI) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in support of site assessment activities conducted at the Atlantic Metals Corporation site located at 2117 East York Street in Philadelphia, Pennsylvania, 19125-1604. The data collected during the SI will be used to determine the need for additional assessment or response activities at the site or in the surrounding area.

This trip report provides site background information in Section 2.0, describes investigation activities in Section 3.0 and summarizes the analytical data and provides conclusions in Section 4.0. All references cited in this report are listed in Section 5.0. All figures are included in Appendix A and a copy of the logbook documentation is provided in Appendix B.

## **2.0 SITE BACKGROUND**

Former potential lead smelter sites nationwide were identified in an April 2001 article published in the American Journal of Public Health by Eckel, and others (Eckel study) (Reference [Ref.] 1). The majority of these former potential lead smelters operated prior to 1964 and closed before the current environmental regulations were instituted. As part of the Eckel study, soil samples were collected from several of the identified former lead smelter properties. Results from the analysis of these soil samples indicated that concentrations of lead exceeded EPA's soil screening level for lead in residential soils. The results of the Eckel study indicate that the air disposition of lead into soils from former smelter operations may present an ongoing public health concern due to exposure of residential populations, especially children, to soils containing elevated concentrations of lead (Refs. 1, 2, and 3). One of the sites identified in the Eckel study was the Atlantic Metals Corporation site formerly located at 2117 East York Street in Philadelphia, Pennsylvania. Each former smelter property was given a number in Eckel's study. The Eckel study number for this site is 305 (Ref. 1).

The geographic coordinates of the former Atlantic Metals Corporation facility are 39.9819° north latitude and 75.1275° west longitude on the Philadelphia and Camden, Pennsylvania – New Jersey Quadrangle, 7.5 minute series, United States Geological Survey topographic map (see Appendix A, Figure 1). The site is identified in EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database as the Atlantic Metals Corporation site, CERCLIS ID Number PAN000306199 (Ref. 4).

Tetra Tech completed a windshield reconnaissance of the site and surrounding area on February 7, 2008. A large structure with an associated smokestack was visible on the property surrounded by an undeveloped lot. The property is located in a mixed land use area with large warehouse type structures interspersed with residential properties. Based on the visible evidence of a smokestack that may have potentially been associated with smelter activities and the close proximity to residential properties, Tetra Tech recommended that a soil sampling event be conducted at the Atlantic Metals Corporation site.

### **3.0 INVESTIGATION ACTIVITIES**

On February 17, 2009, Tetra Tech collected in situ and ex situ soil samples from the Atlantic Metals Corporation site. The samples were analyzed for lead concentration using a Niton model XLt portable x-ray fluorescence (XRF) analyzer, calibrated to analyze bulk soil samples using a cadmium<sub>109</sub> radioactive source. XRF analysis was performed in accordance with EPA Emergency Response Team (ERT) Standard Operating Procedure (SOP) No. 1707, "X-MET 880 Field Portable X-Ray Fluorescence Operating Procedures" (Ref. 5).

Tetra Tech collected in situ soil samples from 28 randomly selected undeveloped locations to the southeast, northeast and west of the structure that currently exists on the property (see Appendix B, Logbook Documentation). The in situ lead concentrations recorded ranged from 66.9 parts per million (ppm) to 595.0 ppm. To confirm the results of the in situ readings, Tetra Tech collected soil from 14 locations for ex situ XRF analysis. The samples were collected from 0 to 6 inches below the ground surface (bgs). Each sample was placed in a plastic Ziploc bag and transported to the Tetra Tech Boothwyn office for XRF sample preparation and analysis.

The ex situ sample preparation steps included:

- Placing a 50-gram aliquot of homogenized soil in a labeled baking cup
- Placing baking cup in oven for 2 hours at 350° F
- Screening the dried, 50-gram sample through a #10 mesh sieve (60 micron)
- Placing sieved sample in labeled XRF analysis cup
- Placing clean paper over sample in cup, place cotton ball over paper, and snap on the sample cup cover

Each XRF sample cup was placed into the portable XRF for analysis. Table 1 below summarizes the results. Sample locations are provided in Appendix A, Figure 2.

**TABLE 1**  
**XRF ANALYTICAL RESULTS SUMMARY**

<b>Sample ID</b>	<b>Location</b>	<b>Analyte</b>	<b>Result (ppm)</b>
AM-01	Open area southeast of building	Lead	476.3
AM-02	Open area southeast of building	Lead	264.0
AM-03	Open area southeast of building	Lead	268.4
AM-04	Open area southeast of building	Lead	261.0
AM-05	Open area southeast of building	Lead	111.7
AM-06	Open area southeast of building	Lead	306.3
AM-07	Open area southeast of building	Lead	383.9
AM-08	Open area southeast of building	Lead	425.5
AM-09	Open area southeast of building	Lead	536.3
AM-10	Open area northeast of building	Lead	25.5
AM-11	Open area northeast of building	Lead	76.5
AM-01A	Open area west of building	Lead	99.4
AM-02A	Open area west of building	Lead	192.2
AM-03A	Open area west of building	Lead	59.0

Notes:

AM = Atlantic Metals

ppm = parts per million

XRF = X-Ray Fluorescence

#### **4.0 ANALYTICAL RESULTS SUMMARY AND CONCLUSIONS**

EPA has established a soil screening level (SSL) for lead in residential soils (400 ppm) and industrial soils (800 ppm) (Ref. 6). The SSL can be used as a guidance level to identify sites that may pose potential risk and warrant additional assessment. The SSL established for residential

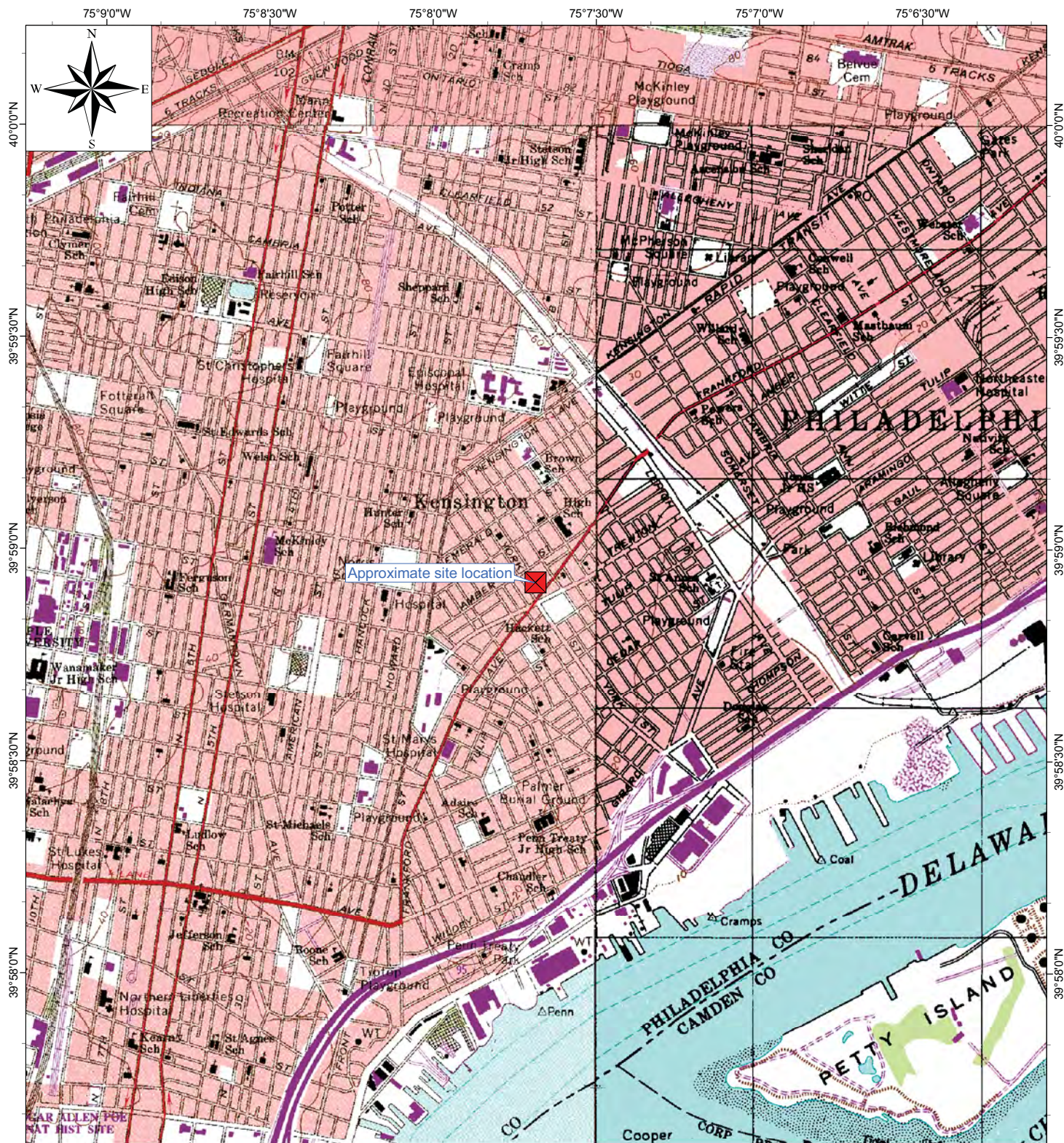
soil of 400 ppm is a risk-based concentration calculated for a bare soil child's play area and the level established for industrial soil is the risk-based concentration for a non-play area (Ref. 7). As shown in Table 1, none of the lead concentrations recorded for ex situ samples collected in the vicinity of 2117 East York Street exceeded the industrial soil (non-play area) SSL. Three samples exceeded the residential (play area) SSL, with a maximum concentration detected of 536.3. The ex situ analytical results confirmed the results obtained during the in situ sampling, which indicated a maximum lead concentration in the vicinity of the former Atlantic Metals Corporation, of 595.0 ppm. The property is not used as a play area for children and the lead concentrations detected are not elevated enough to adversely impact surrounding residential properties; therefore, there is no elevated risk of lead exposure to the surrounding population from soil located on this property. In addition, the current property owner of 2117 East York Street indicated to EPA at the time of the field activities, that the property was never used for smelter operations. The building has a smokestack because it was used as a power generating facility for an adjacent brewery. Subsequently, the property was used for scrap metal recycling, but was never used as a smelter.

## 5.0 REFERENCES

1. Eckel, W.P., Rabinowitz, M.B., Foster, G.D. American Journal of Public Health. "Discovering Unrecognized Lead-Smelting Sites by Historical Methods". April 2001.
2. Pennsylvania Department of Health. Suspected Former Lead Smelter Sites: A Potential Risk Factor for Childhood Lead Poisoning. August 2004.
3. U.S. Environmental Protection Agency (EPA). Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities. OSWER Directive 9355.4-12. July 14, 1994.
4. U.S. EPA. Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) database. On-Line Address: <http://cfpub.epa.gov/supercpad/cursites/srchsites.cfm>
5. EPA. SOP 1707. "X-MET 880 Field Portable X-Ray Fluorescence Operating Procedures." ERT. Edison. December 1994. Soil Screening Levels Master Table. September 12, 2008. Available at: [http://www.epa.gov/reg3hwmd/risk/human/rb-concentration\\_table/Generic\\_Tables/pdf/master\\_sl\\_table\\_run\\_12SEP2008.pdf](http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/pdf/master_sl_table_run_12SEP2008.pdf)
6. EPA. Soil Screening Levels Master Table. September 12, 2008. Available at: [http://www.epa.gov/reg3hwmd/risk/human/rb-concentration\\_table/Generic\\_Tables/pdf/master\\_sl\\_table\\_run\\_12SEP2008.pdf](http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/pdf/master_sl_table_run_12SEP2008.pdf)
7. Agency for Toxic Substances & Disease Registry. Case Studies in Environmental Medicine (CSEM). "Lead Toxicity, What are the U.S. Standards for Lead Levels?". Available at: [www.atsdr.cdc.gov/csem/lead/pb\\_standards2.html](http://www.atsdr.cdc.gov/csem/lead/pb_standards2.html)

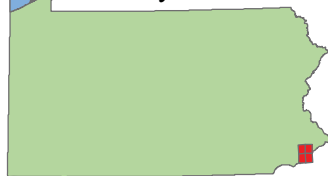
**APPENDIX A**  
**FIGURES**





Quadrangle Location = ■

Pennsylvania



Atlantic Metals Corporation Site  
2117 East York Street, Philadelphia, Pennsylvania 19125

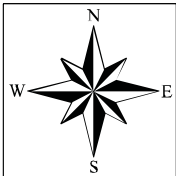
**Figure 1**  
Site Location Map

TDD No. E33-024-08-12-001  
EPA Contract No. EP-S3-05-02

Map created on February 24, 2009  
by D. Call, Tetra Tech EM Inc.



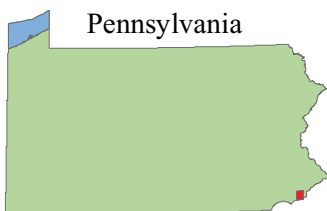




Source: Modified from DigitalGlobe aerial photography, October 2006.

0 50 100  
Feet

Approximate Site Location = ■



Pennsylvania

**Atlantic Metals Corporation Site**  
2117 East York Street, Philadelphia, Pennsylvania 19125

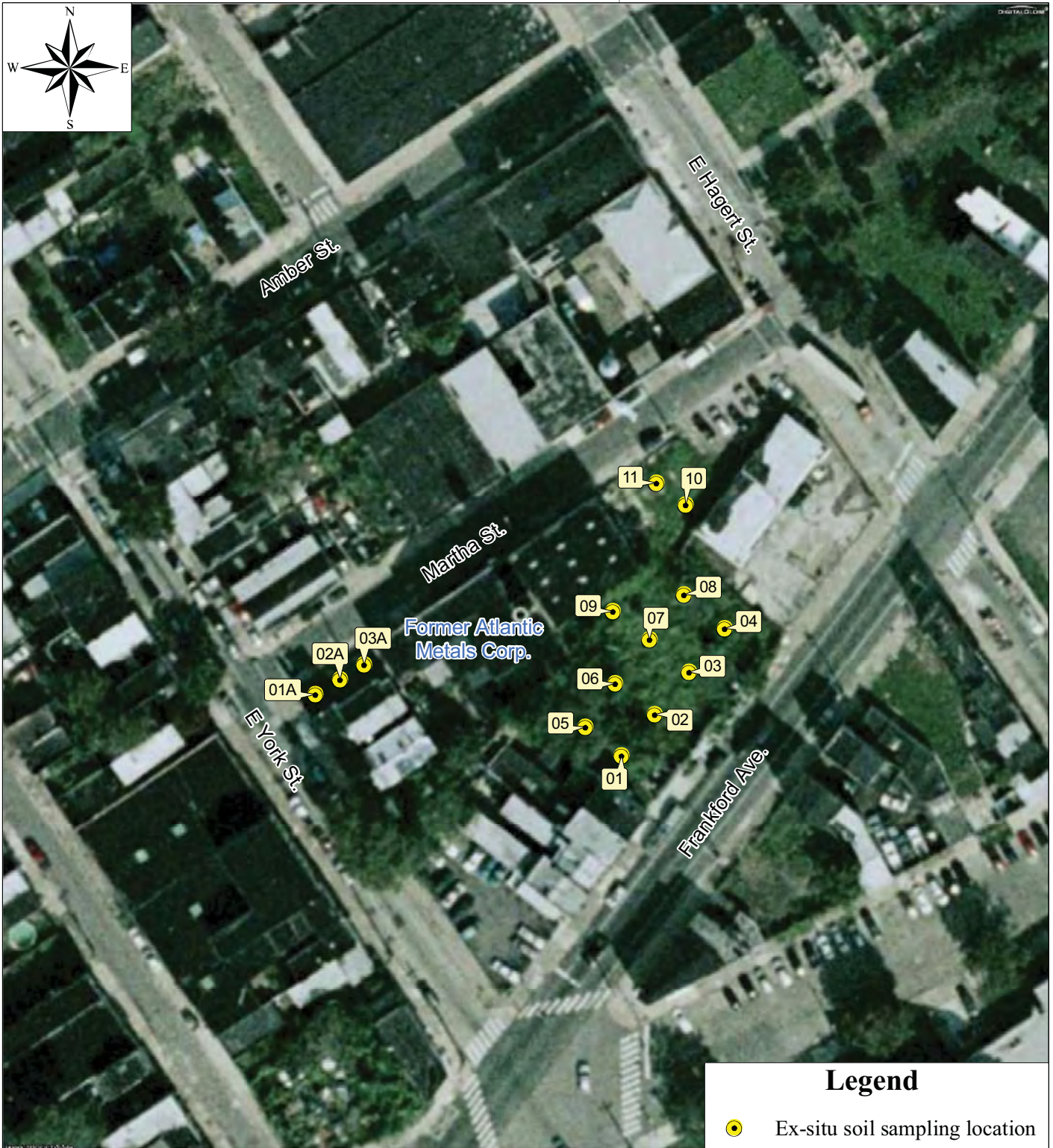
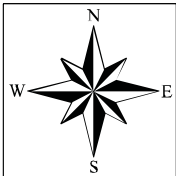
**Figure 2**  
Site Layout Map

TDD No. E33-024-08-12-001  
EPA Contract No. EP-S3-05-02

Map created on February 24, 2009  
by D. Call, Tetra Tech EM Inc.







Source: Modified from DigitalGlobe aerial photography, October 2006.

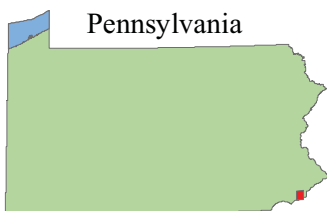
Note: For the sake of clarity, the prefix 'AM-' has been omitted from the sampling location labels.

### Legend

Ex-situ soil sampling location

0 50 100  
 Feet

Approximate Site Location =



Pennsylvania

Atlantic Metals Corporation Site  
 2117 East York Street, Philadelphia, Pennsylvania 19125

**Figure 3**  
 Sampling Location Map

TDD No. E33-024-08-12-001  
 EPA Contract No. EP-S3-05-02

Map created on February 24, 2009  
 by D. Call, Tetra Tech EM Inc.



**APPENDIX B**  
**LOGBOOK DOCUMENTATION**



2/17/09 - Atlantic Metals Site

Tetra Tech

and [redacted] arrive on site @ 0930.

Location is 2117 E York St. Philadelphia, PA  
1000 - meet John Rajkowski - EPA Region 3.

Do walk-through of property. South and east of  
existing building is open area, soil covered.

[redacted] starts collecting in situ XRF readings  
See attached figure for recorded lead  
readings. 6 p.m. BW collected

Highest XRF reading recorded was 595 ppm  
collected in open area east of building.  
1045 Site Owner arrives.

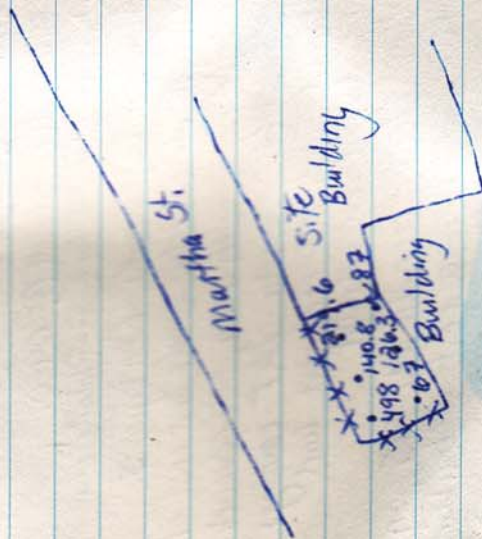
[redacted] discusses ~~the~~ property boundary issues  
Site Owner notifies JR that his property  
consists of site building and small  
area located west of building.

[redacted] & [redacted] proceed to uncovered area of  
property associated with 2117 E. York.  
Area completely fenced.

[redacted] takes readings with XRF in this  
area. See next page.

2/17/09



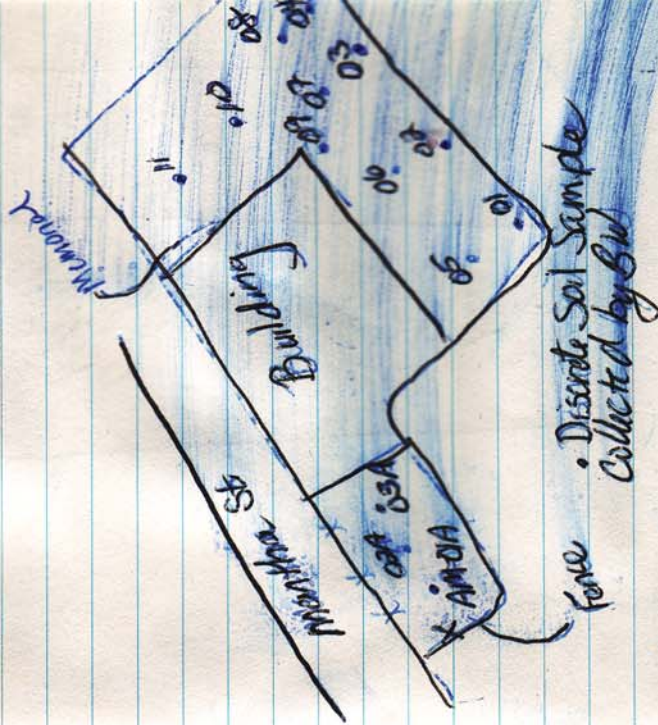


N ↑

Three discrete samples collected in this  
area for Exsity analysis (see p. 4  
for locations)

AM-01A - 1110 - BW  
AM-02A 1112 - BW  
AB-03A 1117 - BW

2/17/09



Fence

Discrete Soil Sample  
Collected by BW

All ex situ samples  
collected in accordance  
w/ SAP.  
Off site @ 1130.

2/17/09



## Exsity XRF Readings

	ppm
AM-01	470.3
02	764.0
03	268.4
04	261.0
05	11.7
06	306.3
07	383.9
08	425.5
09	536.3
10	25.5
AM-11	70.5
AM-01A	99.4
AM-02A	198.2
AM-03A	59.0

See Figure on p. 14 for sampling locations where soil collected for ex situ analysis.

230110

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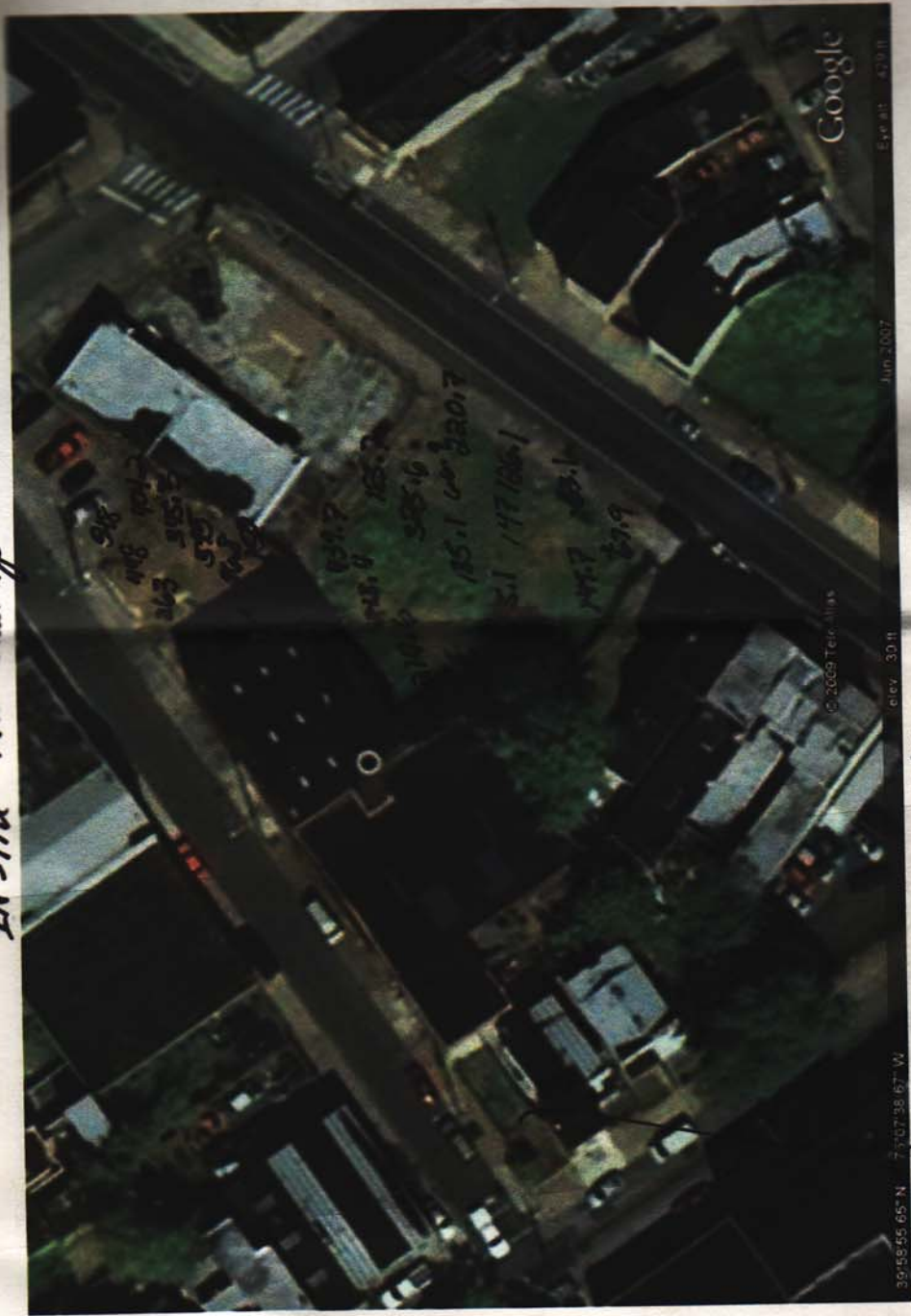
230110

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INSITU XRF Readings



See p. 18 for readings